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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/713,973	11/16/2000	Hideaki Yoshida	OOCL-44 (2KF-OOS1003)	5427
26479	7590	05/24/2004	EXAMINER	
STRAUB & POKOTYLO 620 TINTON AVENUE BLDG. B, 2ND FLOOR TINTON FALLS, NJ 07724			YODER III, CHRISS S	
			ART UNIT	PAPER NUMBER
			2612	5

DATE MAILED: 05/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/713,973

Applicant(s)

YOSHIDA, HIDEAKI

Examiner

Chriss S. Yoder, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18 is/are allowed.
- 6) ☒ Claim(s) 19-22, 26-29, and 33-34 is/are rejected.
- 7) ☒ Claim(s) 1, 5, 23-25, and 30-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2 and 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

Figures 1A -1D should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1 and 5 are objected to because of the following informalities:

1. Claim 1 recites the limitation "imagining device" on page 59, line 19, which the examiner believes should read "imaging device." These claims will be examined as understood by the examiner.
2. Claim 5 recites the limitation "imagining device" on page 63, line 14, which the examiner believes should read "imaging device." These claims will be examined as understood by the examiner.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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3. Claims 19-21, 26-28, and 33-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto et al. (US Patent # 4,689,686).

4. The examiner notes that claim 19 has been rejected without any weight on specific/sequential timing.

5. In regard to claim 19, note Hashimoto discloses the use of a device for photographing an image comprising a solid-state imaging device including a charge accumulating section on which the image is projected, for converting the image into charges and accumulating the charges, a charge transfer section for receiving the accumulated charges from the charge accumulating section and transferring them, and a output section for outputting the transferred charges as an image signal (figure 1: 11, 13, and 14), a driving means for driving the charge accumulating section to accumulate the charges, the charge transfer section to transfer the charges from the charge accumulating section to the output section via the transfer section at a normal transfer rate, and the outputting section to output the image signal in a normal driving mode (figure 2: 1 and 36), an optical shutter means which is capable of switching between an opening mode for permitting the image to project the image on the accumulating section and a closing mode for inhibiting the image from being projected on the accumulating section, the optical shutter means having a delay in switching from the closing mode to the opening mode or from the opening mode to the closing mode (figure 2: 31, 32, and 39; and figure 8: shutter), and exposure control means for controlling the driving means and the shutter means, wherein the exposure control means switches the shutter means to the closing mode (figure 2: 38), causes the driving means to start to discharge

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the charges from the accumulating section to the outside the imaging device (figure 8: SI), causes the driving means to drive the charge transfer section at a high transfer rate during a predetermined period, which transfers the charges in the charge transfer section to the outside the imaging device (figure 8: SI), causes the driving means to stop the transfer of the charges in the charge transfer section (figure 8: SI), switches the shutter means from the closing mode to the opening mode (figure 8: shutter), causes the driving means to stop the discharge of the charges from the accumulating section (figure 8: SI), causes the driving means to the accumulating section to start to accumulate charges during a predetermined exposure period (figure 8: time 20), switches the shutter means to the closing mode (figure 8: shutter), and causes the driving means to drive the charge transfer section in the normal mode, and to output an image signal from the output section (figure 8: SI).

6. In regard to claim 20, note applicant discloses that the predetermined exposure period is defined between the stop of the discharge and the start of switching the shutter means to the closing mode (figures 8: exposure and SI).

7. In regard to claim 21, note Hashimoto discloses that the exposure control means causes the driving means to drive the charge transfer section at high transfer rate during a predetermined transfer period after the shutter means is switched in the closing mode (figure 8: SI at time 21), and causing the driving means to drive the accumulating section and the charge transfer section after the predetermined transfer period (figure 8: SI at time 21; and figure 9C: at time 24).

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8. In regard to claim 33, note Hashimoto discloses the use of an electronic imaging apparatus comprising a solid-state imager (figure 2: 1), an imager driver, coupled to said imager, for outputting imager drive pulse to drive said imager (figure 2: 36), said imager drive pulses at least include a transfer gate pulse, a V_{sub} pulse train, and a VCCD pulse train (figure 8: SI), a mechanical shutter, arranged in front of said imager, for switching incident light rays directing to said imager (figure 2: 31, 32, and 39), a shutter driver, coupled to said shutter, for outputting shutter drive pulses to switch said shutter between open and closed state (figure 2: 39; and figure 8: shutter), a controller for controlling said imager driver and said shutter driver according to an exposure sequence (figure 2: 38; and figure 8: shutter), wherein the controller causes said shutter driver to switch said shutter to closed state prior to beginning an exposure of said imager (figure 8: shutter at times 19 and 20), wherein said imager driver to applies said V_{sub} pulse train and said CCD pulse train (figure 2: 1 and 36), causes said shutter driver to switch said shutter to open state (figure 2: 38 and 39; and figure 8: shutter), causes said imager driver to terminate outputting the VCCD pulse train, after said shutter switched to fully open (figure 9C: ϕS at time 24), causes either said imager driver to apply said transfer gate pulse to said imager or said shutter driver to switch said shutter to close (figure 8: shutter), and reading out an image signal from said imager while keeping said shutter closed (figure 8: shutter and SI at time 21).

9. In regard to claims 26, 27, 28, and 34, these are method claims, corresponding to the apparatus in claims 19, 20, 21, and 33 respectively. Therefore, claims 26, 27, 28,

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and 34 have been analyzed and rejected as previously discussed with respect claims 19, 20, 21, and 33 respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto et al. (US Patent # 4,689,686) in view of Lin (US Patent # 5,760,727).

11. In regard to claim 22, note Hashimoto discloses the use of a device for photographing an image comprising a solid-state imaging device including a charge accumulating section on which the image is projected, for converting the image into charges and accumulating the charges, a charge transfer section for receiving the accumulated charges from the charge accumulating section and transferring them, and a output section for outputting the transferred charges as an image signal (figure 1: 11, 13, and 14), a driving means for driving the charge accumulating section to accumulate the charges, the charge transfer section to transfer the charges from the charge accumulating section to the output section via the transfer section at a normal transfer rate, and the outputting section to output the image signal in a normal driving mode (figure 2: 1 and 36), an optical shutter means which is capable of switching between an opening mode for permitting the image to project the image on the accumulating section and a closing mode for inhibiting the image from being projected on the accumulating

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section, the optical shutter means having a delay in switching from the closing mode to the opening mode or from the opening mode to the closing mode (figure 2: 31, 32, and 39; and figure 8: shutter), and exposure control means for controlling the driving means and the shutter means, wherein the exposure control means switches the shutter means to the closing mode (figure 2: 38), causes the driving means to start to discharge the charges from the accumulating section to the outside the imaging device (figure 8: SI), causes the driving means to drive the charge transfer section at a high transfer rate during a predetermined period, which transfers the charges in the charge transfer section to the outside the imaging device (figure 8: SI), causes the driving means to stop the transfer of the charges in the charge transfer section (figure 8: SI), switches the shutter means from the closing mode to the opening mode (figure 8: shutter), causes the driving means to stop the discharge of the charges from the accumulating section (figure 8: SI), causes the driving means to the accumulating section to start to accumulate charges during a predetermined exposure period (figure 8: time 20), switches the shutter means to the closing mode (figure 8: shutter), and causes the driving means to drive the charge transfer section in the normal mode, and to output an image signal from the output section (figure 8: SI), and a means to drive the charge transfer section a high transfer rate during a predetermined transfer period after the shutter means is switched in the closing mode, and causing the driving means to drive the accumulating section and the charge transfer section after the predetermined transfer period in the normal transfer mode (figure 8: SI at time 19). Therefore, it can be seen that the Hashimoto fails to disclose a means for determining an exposure time and

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means for comparing the determined exposure time with a reference exposure time and setting one of a first and a second photographic mode, and means to drive the charge transfer section a high transfer rate during a predetermined transfer period after the shutter means is switched in the closing mode. Lin discloses the comparison of the exposure time to a reference value (column 3, line 66 – column 4, line 4; and figure 5:66-68). Lin teaches that the comparison of the exposure time to a reference value is preferred in order to perform the proper functions to output a proper image. Official Notice is taken that both the concept and the advantages of using multiple photographing modes in an electronic camera are notoriously well known and expected in the art. Therefore, it would have been obvious to one of ordinary skill in the art to have been motivated to include the use of a comparison of the exposure time to a reference value and multiple photographing modes in an electronic camera in order to adapt the camera to the desired/required mode for different situations and output a proper image.

12. In regard to claim 29, this is a method claim, corresponding to the apparatus in claim 22. Therefore, claim 29 has been analyzed and rejected as previously discussed with respect claim 22.

Allowable Subject Matter

Claims 1-18 are allowed.

4. The following is an examiner's statement of reasons for allowance:

5. As for claim 1, the prior art does not teach or fairly suggest the use of an imaging device that causes the driving means to supply the charge discharging signal to the

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imaging device at a first time, causes the driving means to supply a high transfer rate driving signal at a first time, causes the driving means to stop supplying the high transfer rate driving signal at a second time, switching the shutter open after the second time, causing the driving means to stop supplying the discharge signal a time equal to or before the third time, switches the shutter closed at a fourth time, and causes the driving means to supply a normal driving signal at a fifth time, when the shutter is closed, outputting the image signal.

13. As for claim 5, the prior art does not teach or fairly suggest the use of an the prior art does not teach or fairly suggest the use of an imaging device that causes the driving means to supply the charge discharging signal to the imaging device at a first time, causes the driving means to supply a high transfer rate driving signal at a first time, causes the driving means to stop supplying the high transfer rate driving signal at a second time, switching the shutter open after the second time, causing the driving means to stop supplying the discharge signal a time equal to or before the third time, switches the shutter closed at a fourth time, and causes the driving means to supply a normal driving signal at a fifth time, when the shutter is closed, outputting the image signal.

14. As for claim 10, the prior art does not teach or fairly suggest the use of an imaging device that causes the driving means to supply the charge discharging signal to the imaging device at a first time, causes the driving means to supply a high transfer rate driving signal at a first time, causes the driving means to stop supplying the high transfer rate driving signal at a second time, switching the shutter open after the second

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time, causing the driving means to stop supplying the discharge signal a time equal to or before the third time, switches the shutter closed at a fourth time, and causes the driving means to supply a normal driving signal at a fifth time, when the shutter is closed, outputting the image signal.

15. As for claim 14, the prior art does not teach or fairly suggest the use of an the prior art does not teach or fairly suggest the use of an imaging device that causes the driving means to supply the charge discharging signal to the imaging device at a first time, causes the driving means to supply a high transfer rate driving signal at a first time, causes the driving means to stop supplying the high transfer rate driving signal at a second time, switching the shutter open after the second time, causing the driving means to stop supplying the discharge signal a time equal to or before the third time, switches the shutter closed at a fourth time, and causes the driving means to supply a normal driving signal at a fifth time, when the shutter is closed, outputting the image signal.

16. Claims 23-25 and 30-32 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

17. As for claim 23, the prior art does not teach or fairly suggest the use of a comparison of the exposure time to a predetermined reference exposure time that is set to $TC = dt/2$ to $2dt$ in order to select a photographic mode.

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18. As for claim 30, the prior art does not teach or fairly suggest the use of a comparison of the exposure time to a predetermined reference exposure time that is set to $TC = dt/2$ to $2dt$ in order to select a photographic mode.

19. As for claim 32, the prior art does not teach or fairly suggest the use of a comparison of the exposure time to a predetermined reference exposure time that is set to 1.4 ms in order to select a photographic mode.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US006614477B1: note the use of an electronic shutter.

US005767904A: note the use of a mechanical and electronic shutter.

US005517243A: note the use of a mechanical and electronic shutter.

US004763204: note the use of a mechanical and electronic shutter.

US006498623B1: note the use of variable time signals to expose and transfer an image.

US004599657: note the use of a mechanical and electronic shutter.

US006700610B1: note the use of a mechanical and electronic shutter.

US006292220B1: note the use of an optical and electronic shutter.

US006628328B1: note the use of a mechanical and electronic shutter and multiple modes.

US006618090B1: note the use of a mechanical and electronic shutter.

US006667770B1: not the use of timing of image exposure and transfer.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chriss S. Yoder, III whose telephone number is (703) 305-0344. The examiner can normally be reached on M-F: 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber, can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-HELP.

CSY
May 17, 2004


WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600